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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,138	12/07/2004	Toshio Nakanishi	Q84808	6828
23373	7590	09/23/2005		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER MULLINS, BURTON S	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/517,138

Applicant(s)

NAKANISHI ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-17 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on December 7th, 2004 has been partially considered by the examiner. Copies of some of the foreign Japanese documents cited in the IDS were not provided. Those documents readily available to the examiner have been considered and initialed. For the remaining documents, it is requested that applicant provide copies so that they may be considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US 5,898,252) in view of Sakai et al. (US 4,988,055). Tanaka generally teaches applicant's invention including a generator rotor comprising: a pair of pole cores 2a2b (Fig.1) in each of which a plurality of claw-shaped magnetic poles having a tapered shape (Fig.1) are formed at a uniform angular pitch in a circumferential direction on an outer circumferential edge

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portion of a cylindrical base portion such that a direction of taper of said claw-shaped magnetic poles is aligned in an axial direction (Fig.1), said pair of pole cores being constructed by placing end surfaces of said base portions in contact with each other such that said claw-shaped magnetic poles intermesh (inherent, Fig.1); a bobbin 32 constructed into an annular shape having an angular C-shaped cross section by disposing first and second flange portions so as to extend radially outward from two axial end portions of a cylindrical drum portion (Fig.1), said bobbin being mounted to said base portions so as to be held between root portions of said claw-shaped magnetic poles of said pair of pole cores (Fig.1); and a rotor coil 31 having a coil field constructed by winding a coil wire having a circular cross section onto an outer circumference of said drum portion of said bobbin in multiple layers so as to make columns in each of said layers equal in number in an axial direction (Fig.1). Tanaka does not teach the remaining features of claims 1, i.e., odd and even layers with gap surfaces relative to the inner peripheral walls of flange portions.

Sakai teaches a coil assembly comprising a bobbin with first and second flanges, and grooves in the flange (Fig.28B) such that: "odd numbered layers of said coil field (e.g., the inner coil layer in Fig.28B) are constructed such that said coil wire is wound for approximately one turn around said drum portion in contact with an inner peripheral wall surface (41b) of said first flange portion, then wound into a plurality of columns in an axial direction such that said columns of said coil wire contact each other, and said coil wire in a final column forms a gap S relative to an inner peripheral wall surface of said second flange portion (41c); even numbered layers of said coil field (e.g., the second coil layer in Fig.28B) are constructed such that said coil wire is wound for approximately one turn around said drum portion in contact with an inner

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peripheral wall surface of said second flange portion (41c), then wound into a plurality of columns in an axial direction such that said columns of said coil wire contact each other, and said coil wire in a final column forms a gap S relative to an inner peripheral wall surface of said first flange portion 41b; and said gap S satisfies an expression $D/4 \leq S \leq D/2$ relative to a diameter D of said coil wire" since Fig.10 shows a distance P/2 between the end of a groove and the flange 41c, where P is the size of the groove, equivalent to the diameter of the coil. Sakai's coil assembly provides stable multi-layer wire winding and high density (c.1, lines 47-51). Note that Sakai's arrangement applies to both circular and square or hexagonal cross-section windings (c.9, lines 46-52).

It would have been obvious to modify Tanaka and provide a coil assembly with odd and even layers having gap surfaces relative to the inner peripheral walls of flange portions per Sakai since this would have been desirable to provide a stable multi-layer wire winding and high density.

Regarding claim 2, the shift or overlap areas in Sakai occur at two different radial directions (Fig.12).

Regarding claim 3, note Sakai's grooves in the bobbin drum portion arranged at a pitch of P, equal to the wire diameter (Fig.10).

Regarding claim 6, Tanaka Fig.9 shows plural thick-wall ribs on the flange portions formed by guides 32a.

Regarding claim 7, Tanaka's bobbin comprises heat-resistant nylon (c.1, lines 34-35).

Regarding claim 8, Sakai Fig.30 shows the upper (outer) layers with fewer wires/columns.

Allowable Subject Matter

5. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach the claimed feature of the cross-over points positioned radially outside a small radius portion of the drum.

6. Claims 9-17 are allowed. Regarding claim 9, the prior art, in particular Tanaka or Sakai, does not teach gaps G between the coil wires, with the gap S satisfying the expression $S = (D+G)/2$.

Conclusion

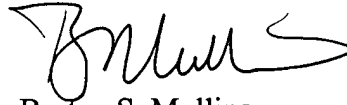
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029.

The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "B. Mullins", with a stylized flourish at the end.

Burton S. Mullins
Primary Examiner
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bsm
19 September 2005